HYDRO PISTOL GRIP

Instruction Manual

Wright Manufacturing
4600X Wedgewood Blvd
Frederick, Md 21703

Velke PG serial 54956 and higher

WARNING: READ THIS MANUAL BEFORE USING

01/2012

Foreword

Welcome to the progressive group of mowing professionals who use Wright mowers. We are focused on giving you advanced engineering and quality construction in each mower we build.

This manual explains the features and promotes safer use of the mower. Please read it and follow the instructions carefully so you can have many years of productive mowing.

For service, remember that your Wright dealer knows your mower best and is interested in your satisfaction. He can provide you with quality maintenance and other assistance you may need.

Please give this manual to anyone who may use the mower for them to study before they operate it. Give the manual to anyone to whom you may sell the mower in the future. It is important for the next owner to receive this information also.

As Wright Manufacturing, Inc. is constantly seeking ways to improve its products, the mower you have may differ slightly from the information and specifications in this manual. Because of our continuous product improvement, Wright reserves the option to make changes at any time without notice.

Wright Manufacturing, Inc.

SAFETY ALERT

This is the safety alert symbol. It is used throughout this manual and on the mower's safety labels to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death. Read these instructions carefully. It is essential that you read the instructions and safety precautions before you attempt to work on or use this unit.

WARNING

This symbol with the word "WARNING" indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

This symbol with the word "CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

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PRE-DELIVERY SERVICE OF MOWER BY DEALER

WARNING

Before proceeding with the Pre-Delivery Service of your mower, please read the safety instructions manual in its entirety. Only your authorized Wright dealer should perform the Pre-Delivery Service of the mower.

The Wright Velke Hydro PG is shipped completely assembled and has been adjusted and tested at the factory. However, due to the jostling of the shipping process and the delivery time lapse, the following items need to be repeated again before starting the mower. After you have uncrated the mower, follow these procedures in the order indicated:

□ Inspect the mower for any damage, unusual conditions or missing parts.

□ Inspect the mower for all of its decals, especially the warning decals. There should be one blade warning decal on each side of the deck, the “shield missing” decal under the blade belt cover, and the dash decal.

□ Check service, parts and recall bulletins to ensure unit does not need any updates.

□ Check (and fill if necessary) engine oil level according to the engine manufacturer’s recommendation.

□ Check (and fill if necessary) hydraulic fluid level. Use fully SYNTHETIC oil: Mobil-1 15W-50 (see Hydro Check/Fill section of this manual).

□ Check rear tire pressure – 18 – 22 psi. is recommended. Use the higher pressures for heavier operators. Front Casters are equipped with non-pneumatic tires and do not require any air. Lowering tire pressure will affect deck pitch. ***Always check pitch any time tire pressure is set below recommended pressures***.

□ Lubricate all appropriate moving parts (see the Lubrication section of this manual).

□ Check the battery (if equipped) to see that the cables are tight and connected properly. The battery is 12 volts and is a maintenance-free battery. Only charge the battery if it will not start the mower properly.

□ Add regular unleaded gasoline to fuel tank. (use a minimum of 87 octane gasoline) *(You may use gasoline containing up to 10% ethanol and gasoline containing up to 5% of methanol.)*

□ Check brake safety interlock.
- □ Try starting the engine with the parking brake released. (Engine should not start. If engine starts, service the parking brake locking system)
- □ Apply parking brake

□ Start the engine according to the engine manufacturer’s recommendation. Let the engine run at low - mid RPM for several minutes to ensure the engine oil reaches all of the engine parts and gets the hydraulic fluid circulating through the pumps, etc.
- □ Check if the parking brake locking system prevents the units from being driven while engaged. If not, service the parking brake locking system.

□ Release the parking brake. Next, Release the neutral lock and slowly release steering/brake lever, one at a time, to make the wheels move in forward and backward rotation.

□ Before testing the blade clutch/brake operation, make sure the area is clear and there is nothing vulnerable to possible thrown objects from under the mower. No one should be near the mower deck

or in its line of discharge at this or at any time. The discharge chute deflector should be in the down position.

 Move the engine throttle control to ¾ RPM speed setting.

 Turn on the blade clutch switch. Run blades for approximately one minute. Next, engage and disengage the blades a few times about 10 seconds apart. If the blades do not start and stop in a few seconds each time, service the blade brake system.

 With the blades on, disengage the OPC switch to test the Operator Presence Control switch (OPC). A time delay has been added to the OPC system. The engine should die and the blades should stop with-in 4-7 seconds after removing your hand from the OPC paddle. If not, service the OPC system.

 Disengage the blades.

 Drive the mower around on a level parking lot. Check that the mower drives in a straight line when both hand controls are at the full speed position. (If not, refer to How to Perform The Tracking Adjustment section of this manual)
    As you drive the mower, listen for any unusual noises and test for irregular operation and adjust or service as necessary.

 Go over the safety information and operating procedures in this manual with the customer. Instruct each customer in proper operation and observe the customer during their initial operation on a level parking lot. Repeat until the customer is familiar and comfortable with the basic operation and use of the mower.

- **Dealer:**
    Register the mower online within 14 days from the date of retail purchase. (*If unable to use the online registration process, contact your Distributor to register for you*)
    Registering the product indicates you have successfully completed the pre-delivery service checklist.
    The limited warranty is considered invalid unless the unit is registered and the above steps are taken.
    Remember, the purchaser is both your customer and our customer and his/her satisfaction is very important. Thank you for supporting our products.

The mower is now ready for delivery to your customer

1 Introduction

This mower is built to the highest standards in the industry. However, carelessness or operator error may result in serious bodily injury or death. Accident and hazard prevention are dependent upon the awareness, concern, wisdom, and proper training of the personnel involve in the operation, transport, maintenance, and storage of the equipment. Make sure every operator is properly trained and thoroughly familiar with all of the information in this manual before operating the equipment.

This machine is constructed only for mowing grass on lawns without obstacles such as stones, tree stumps etc. The machine can also be used for other tasks when equipped with special accessory attachments; Grass Gobbler, Velke Sulky and JRCO attachments. All other types of uses are incorrect. The manufacturer's directions concerning operation, maintenance and repairs must be carefully followed.

Lawn mowers and all power equipment, can be potentially dangerous if used improperly. Safety requires good judgment, careful use in accordance with these instructions and common sense.

The machine must only be operated, maintained and repaired by persons familiar with the machines special characteristics and who are also knowledgeable about the safety instructions. Use only approved repair parts to maintain.

Accident prevention regulations, other general safety regulations, occupational safety rules, and traffic regulations must be followed without fail.

Unauthorized modifications to the design of the machine will absolve the manufacturer from liability for any resulting personal injury or property damage.

This machine is not intended for use in extreme environments, as a tow vehicle, on steep slopes greater than 15 degrees or in an enclosed area without good ventilation.

1.1 Technical Data

Weight of overall machine	32"=520 lbs, 36"=545 lbs, 48"=555 lbs, 52"=575 lbs
Machine dimensions (Deflector down)	32" = 72" L x 33.5" (45.5") W x 41" H 36" = 74" L x 36.5" (48.5") W x 41" H 48" = 69" L x 49" (61") W x 41" H 52" = 71.5" L x 53" (65") W x 41" H
Speeds	32" Fwd 6.5 mph, Rev 3.9 mph 36, 48 & 52" Fwd 7.2 mph, Rev 4.3 mph
Power supply	12V DC (Electric Start only)

1.2 General Safety Rules

The Wright Velke Hydro Pistol Grip is designed with your safety in mind. It has the following safety systems with which should become familiar:

- The warning decals on the mower including the parking brake and general warning decal.
- Do not disable any of the safety features.
- The blade switch must be “Off” before starting the engine.
- You must have your hand holding down the handle bar safety arm to engage the blades.
- If you let go of the handle bars while the blades are running the engine will stop and the blades will brake in seconds.
- If using a Velke Pro 1, X2 or SuperPro attachment, you must step off of the attachment when backing.
- Spring loaded chute deflector will help reduce trajectory of thrown objects.
- Belt/Pulley covers on cutter deck.
- Low center of gravity (CG) to improve stability on hills.

1.2.1 Do’s and Don’ts

Do's	Don'ts
Read the operators manual before attempting to operate this machine	Don't disable safety switches
Use all PPE's, eye protection, ear protection and safety shoes	Don't operate when lightening is seen
Ensure all safety switches are operational	Don't lift with a forklift
Keep all shields and covers in place	Don’t change RPM's outside of operating limits
Clean flammable material from machine	Don’t tow or push
Inspect fuel system and fuel lines for cracks, leaks and dryrott	Don’t operate on slopes when wet
Inspect area to be mowed for hazards	Don’t leave a running machine unattended
Only operate in daylight	Don’t change the engines governor setting or overspeed the engine
Mow safe distances away from drop-offs and other hazards	Don’t operate the machine wearing sandals, sneakers or any loose fitting clothes
Maintain a safe distance from people and pets	Don’t back up without being aware of what is behind the machine
Follow daily and weekly maintenance checklists	Don’t suddenly change in forward direction while machine is in a rearward motion
Observe traffic laws while driving machine from one location to another	Don’t operate a poorly maintain machine
Thoroughly inspect the machine after striking a foreign object	Don’t allow persons to operate this machine without reading the operator manuals
Turn off blades when not mowing	Don’t put hands or feet under any part of the machine while it is running
Slow down before turning	Don’t ever carry passengers
Stop engine before removing Grass Gobbler or cleaning under deck	Don’t discharge material towards anyone
Use caution when loading or unloading the machine onto a truck or trailer	Don’t operate the machine if you are sick, fatigued or under the influence of alcohol or drugs
If using a Velke Pro 1, X2 or SuperPro attachment, you must step off of the attachment when backing.	

1.2.2 Warnings!

These warnings are provided to improve safety and should be carefully read before using or maintaining the machine.

WARNING

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CAUTION

This symbol with the word “CAUTION” indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

1.3 Important Information

It is vital that these instructions are available to machine user. It is also important to retain with the machine if the machine is sold or transferred to another user.

1.4 Safety for Operation

WARNING

The Velke Hydro PG should only be used by fully trained operators to prevent the risk of injury to themselves or other personnel. The owner's/user's obligation is to instruct themselves and all potential users in the safe operation of this equipment and be sure they read and follow the instructions in this safety manual and other material provided by Wright Manufacturing, Inc. before using or allowing others to operate the equipment. **DO NOT** operate this unit unless you carefully read, understand and follow the operation and safety instructions contained in this manual and the warning decals provided on the unit. **DO NOT** allow other persons to use this unit unless you make sure they carefully read, understand and follow these instructions. Never allow children to operate or play on the unit.

1.5 User Qualifications

WARNING

This product is designed for use by physically fit, experienced, professional commercial mower operators who have a minimum of 160 hours of experience operating twelve horsepower and greater industrial mowers. Operators must be 18 years or older and weigh at least 120 pounds and no more than 275 pounds. They must have read and understood this manual. ***DO NOT*** *allow children to operate the mower. Never allow passengers on the mower.* ***DO NOT*** *allow adults to operate the mower without proper instruction as mentioned above.*

1.6 User Clothing

WARNING

DO NOT operate the mower while wearing sandals, tennis shoes, sneakers, or shorts. Always wear long non-baggy pants. Wear high-top leather steel-toed work boots with thick, textured tread, soft-rubber soled at all times. **NEVER** wear loose-fitting clothing or jacket pockets that can get caught on the handlebars or control levers of any mower you drive. Wearing safety glasses, ear protection and safety shoes is advisable and required by some local ordinances and insurance regulations.

1.7 Inspect the Mower Before Each Use

WARNING

DO NOT use the mower if any parts are not maintained in good operating condition. Examine the moving parts prior to each use. Look for excessive wear, bald or worn tires, cracks in parts, loose or missing bolts, cotter pins, linchpins or "hair" pins or cable yoke pins, control system ball joints and replace before operating the mower. Make sure all safety equipment provided with the mower is in good operating order, including all the warning decals and the required operator-presence device which stops the engine and blades when the seat-operated Operator Presence Control (OPC) switch is released. (To test the OPC, follow instructions in the Operating Instructions section of this manual.) Be sure that all parts of the hand-operated hydraulic control system are tight and secure. This is to reduce the possibility that the mower could have a loss of control during operation and compromise operator safety.

1.8 Regular Mower Safety

WARNING

Keep your Wright mower in good operating condition, and keep safety devices and shields in place and in working condition. Replace worn tire(s) with less than 3/32" of any tread groove left. Use tires with the tread pattern specified by Wright Mfg., Inc. only. **DO NOT** change the engine governor settings or over-rev the engine contrary to engine manufacturer specifications. Failure to comply can

compromise operator safety, shorten equipment life and void your manufacturer's warranty. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition. Check the blade mounting bolts for proper tightness every eight (8) hours of operation. Check the blades for excessive wear and sharpness every four to eight (4-8) hours of operation. Sharpen dull blades. Replace blades when they become excessively worn. The mower **should not be used** after the blades or other part of the mower strikes a foreign object, until conducting a thorough inspection and any damage is repaired. Make sure the chute deflector is always in place and operating properly. Replace if the deflector becomes worn or ceases to properly deflect the grass in a safe manner. See the instructions in the Recommended Maintenance section of this manual for other items of required maintenance.

1.9 Work Area Conditions and Inspection

Prior to operating the unit, carefully inspect all lawn/ground areas where you plan to use the mower for hidden, hard-to-see objects or uneven ground that may be hidden in the grass. Clear the work area of moveable objects such as wires, rocks, glass, toys, etc. that might be picked up by the mower and dangerously thrown. Remove, if possible, or mark the location of all immovable objects or irregular areas and be sure not to hit them with any part of the mower, its deck or the blades. Obstacles such as holes, abrupt changes in ground contour, tree trunks, stumps or roots, pipes protruding from the ground, paving edges, etc. in the path of operation can abruptly turn or stop the mower. This could possibly throw you into the control handles or even off the mower, causing serious injury or death. The faster you are moving the more potential there is for injury. Mow only in daylight or in good artificial light. Keep away from drop-offs, the edges of ponds, streams, pools, etc. especially at the bottom of slopes. **DO NOT** mow when children or others are nearby. When the Wright mower is in use, never direct the grass discharge toward bystanders, traffic, cars or buildings nor allow anyone within 50 feet of the machine while in operation. Thrown objects can pass through glass windows and some walls of buildings. There is extreme risk of danger from thrown objects or being cut by the blades of the mower. **Never** operate the mower in an enclosed area without good, approved ventilation. Exhaust fumes are dangerous.

1.10 Initial Operating Safety Guidelines

- Read and understand the warnings on the general warning decal on the mower.
- Regularly check and test the safety devices for correct function.
- Recommended PPE is safety shoes, safety glasses and ear protection.
- Know the controls and how to stop quickly.
- Before attempting to start the engine, follow all starting instructions below and in the engine operator's manual.
- Look behind before backing up.
- Before leaving the operator's platform, even momentarily, turn off the blade clutch engagement switch and apply the parking brake. Keep others from coming near the mower. Get back on the mower as soon as possible.
- When leaving the Wright mower unattended, turn off the blade clutch engagement switch, apply the parking brake, stop the engine and remove the key. **Never** leave the machine unattended on a slope in case someone disengages the parking brake. This could create a rollover hazard.
- When transporting, driving onto transport vehicles, into buildings, across parking lots or otherwise not mowing grass, turn off the blade clutch engagement switch to reduce risk of thrown objects and rotating blade hazard. After coming to a stop apply the parking brake, stop the engine and remove the key.
- Before performing any maintenance or repair service, disengage power to blades, apply the parking brake, stop the engine, remove ignition key and spark plug wire from spark plug(s).
- All operators of this mower should exercise caution when driving this mower at high speeds. Sudden acceleration or deceleration may cause serious injury.

- **DO NOT** allow inexperienced persons to operate the mower until they have read and understood these safety instructions. Operate the mower at slower speeds while becoming familiar with it.
- The grass discharge chute deflector must be installed at all times and in the down position except that it may be raised when cleaning out the deck, or a grass catcher is installed or a mulch kit and block-off plate is properly installed.
- If the mower discharges grass clogs, turn off the blade clutch switch, apply the parking brake, stop the engine and remove the key before removing obstruction(s).
- Keep all shields and covers in place, namely, all blade and belt covers, engine shields, and grass discharge chute deflector.
- Keep hands, feet and clothing away from rotating parts, especially the rear wheels, blades, engine flywheel, belts and pulleys.
- **DO NOT** touch engine, muffler or hydraulic system while engine is running or soon after it is stopped. These areas can be so hot as to cause severe burns.
- ***Clean grass, leaves and lubricant spills from surfaces after use to prevent fire hazard.***
- Be alert for traffic when crossing roads or operating near roadways.
- Before climbing curbs, crossing gravel drives, sidewalks or roads, turn off the blades and wait for them to stop.

1.11 Safety for Maintenance

- Repairs carried out by untrained or unauthorized personnel may result in personal injury or serious malfunction of the Velke Hydro PG.
- If Guarding is removed for inspection and component replacement, ensure the parking brake is applied and key is removed prior to inspecting or making repairs and that the guarding is replaced before operation.

1.12 Operation in Forward Direction

Operate the mower slowly until you become familiar with how the mower operates. Do not operate the mower faster than conditions allow. For example, hills, wet or bumpy ground, dim light or high grass are all conditions requiring slower speeds. Never operate the mower at the highest speed unless you are on level, wide, open areas of clearly visible ground or transporting on paved areas. Speeding with any mower is dangerous, and so is traveling faster than conditions should permit on this mower. Sudden stops from excessive speed or falling off the mower may cause serious injury or death.

1.13 Operation in Reverse

Use extreme caution when operating in reverse. DO NOT operate this mower in reverse while standing on the Velke or other sulky. Always keep a firm grip on the mower handles with both hands. Operate the mower very slowly, inching it backward until you become familiar with how the mower operates. Always operate slowly if in an awkward location or position. While backing up never place your foot or feet on the ground near the back edge of the mower to prevent serious personal injury if mower were to run over you. Look behind you before backing to prevent injuring yourself or anyone behind you. Operate at slow speeds in forward and reverse if not completely familiar with mower operation. See the “How to change the Speed Adjustment” section of this manual.

1.14 Zero-Radius Turn Operation

During zero-radius turns (when one mower wheel rotates backwards while the other rotates forward) drive extra slowly to reduce the possibility of losing traction, or control, or becoming dizzy. Be aware that if you do a turn on a slope you may go through all of the orientations to a slope mentioned below and must handle the mower accordingly.

1.15 Operation on Slopes

WARNING

DO NOT operate on steep slopes. Do not operate the mower on slopes steeper than you can feel secure about the traction of the tires and the stability of the mower. Do not operate the mower on slopes at all when the grass is wet. There is a danger of suddenly sliding sideways or down the hill. When operating on a slope, travel across the grade whenever possible, not in an up or down pattern. Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tipping or loss of control. Be especially cautious when changing direction on slopes.

The Wright mower is capable of greater traction on slopes than typical riding mowers because of the benefits of a lower center of gravity. It is essential for you to know more about the handling characteristics of the mower so that you can enjoy more efficient mowing techniques and for increasing your safety.

The Wright mower handles differently at different angles of attack on a slope. It is important to understand the following differences so that you can use or avoid using the mower at different angles for the best advantage. Be aware that if the following orientations to a slope and must handle the mower accordingly. As you use the mower you will gain the technique to mow more lawn than ever before.

When pointing up a slope, the mower has the most weight on the drive wheels and therefore the most traction at the tires. However, this is the angle that it has the most tendency to tip back ("pop-a-wheelie.") This is the preferred angle for mowing small areas of steeper slopes.

Recommendations for this angle:

- Do not accelerate quickly to avoid "popping-a-wheelie."
- If backing down the hill, do not stop suddenly but slow down gradually and maintain an upward force on the handles to keep the front of the mower on the ground.

When pointing down a slope, the mower has the least weight on the drive wheels and therefore the least traction at the tires. This is the angle that the mower has the most tendency to slide. However, this is the angle that it has the least tendency to tip back. Avoid this angle, as it has the least advantage for the mower.

Recommendations for this angle:

- Do not change speed suddenly to minimize the tendency of going into a slide. Accelerate and slow down gently. If you ever go into an uncontrolled slide while pointing down a slope, the recommended procedure is to let go of the handles and move up-hill from the mower. Otherwise, control the mower gently and stay off slopes that tend to make the wheels slide at this orientation.

When crossing a slope sideways, the mower has the average amount of weight on the drive wheels versus the front wheels, similar to level ground. However, this angle leaves the least weight on the higher side drive wheel, tending to make it slip. This is the preferred angle for mowing large areas of gentle slopes.

Recommendations for this angle:

- Do not accelerate quickly to minimize the tendency of "popping-a- wheelie". Accelerate gently. Note: Excessively worn tire tread is dangerous. Replace tire(s) with less than 3/32" of any tread groove left. Use tires with the tread pattern recommended by Wright Mfg., Inc. only. Keep the tire pressure in the drive tires at the recommended level. Higher pressures will cause the tires to have less traction, which will force you to go slower and with less safety.

1.16 Fuel Safety

WARNING

Handle gasoline with care – it is highly flammable. Do not smoke while handling gasoline. Use an approved gasoline container. Never remove the fuel cap or add gasoline to a running or hot engine or an engine that has not been allowed to cool for several minutes after running. Never fill the tank indoors and always clean up spilled gas. NEVER store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

DANGER
FIRE & POISONOUS GAS HAZARD:
• Do not store or operate in an enclosed area. Engine produces CO, an odorless, deadly poison
• Do not smoke while refueling
• Keep smoking material, sparks and flames away
• Do not add fuel when engine is hot or running
• Do not fill to top of tank; leave room for fuel expansion
• Do not operate while cap is removed or near spilled fuel
WMI#76490050

1.17 Hydraulic Safety

WARNING

Use paper or cardboard and not hands to search for leaks. Keep body and hands away from pin holes or fittings that eject hydraulic fluid under high pressure. Hydraulic fluid escaping under high pressure may have sufficient force to penetrate skin and cause serious injury. If foreign fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result. Seek medical attention immediately. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before starting your Wright mower. Hydraulic fluid is under high pressure. If you need service on your hydraulic system, please see your authorized Wright dealer.

1.18 Using a Spark Arrester

The engine in this machine is not equipped with a spark arrester muffler. It is in violation of California Public Resources Code Section 4442 to use or operate the engine on or near any forest-covered, brush-covered, or grass covered land unless the exhaust system is equipped with a spark arrester meeting any applicable local or state laws. Other states or federal area may have similar laws.

1.19 Replacement Parts

WARNING

Use of parts other than specified parts supplied by Wright Manufacturing, Inc. may compromise the safe use of the mower, are not recommended and their use could void the warranty. Always check with your Dealer or the Wright Mfg website for the latest Illustrated Parts List for your equipment.

Wright is fully concerned with your safety. Please read the above again and again until you fully understand the methods to promote the safest operation possible.

**REMEMBER – YOUR MOWER CAN BE ONLY AS SAFE AS THE OPERATOR.
FAILURE TO FOLLOW SAFE OPERATING PRACTICES MAY RESULT IN
SERIOUS INJURY OR DEATH.**

2 Warning, Safety and Instructional Decals

- Specific safety warning decals are located on the equipment near immediate areas of potential hazards.
- Keep all safety signs legible. Remove all grease, dirt and debris from safety signs and instructional decals.
- Replace worn, damaged or missing safety decals.
- If an attachment or accessory has been installed, make sure current safety decals are visible.

1-Blade engage/disengage switch
2-Ignition switch, Off
3-Ignition switch, Run
4-Ignition switch, Start
5-Apply brake to start
6-Throttle, Slow/Idle
7-Throttle, Fast/Full
8-Speed Control, Neutral
9-Speed Control, Fast

DANGER
ROTATING BLADE HAZARD
KEEP AWAY - ROTATING BLADES!
PREVENT SERIOUS INJURY OR DEATH FROM THROWN OBJECTS OR BLADE CONTACT
DO NOT OPERATE BLADES WITHOUT GRASS CATCHER OR CHUTE DEFLECTOR IN PLACE
DO NOT POINT DISCHARGE TOWARD PEOPLE, ANIMALS OR BUILDINGS WHEN OPERATING
STOP BLADES BEFORE REMOVING CATCHER
KEEP HANDS AND FEET AWAY FROM DECK WHEN ENGINE IS RUNNING
WMI# 76460001

76490001
Blade Hazard

DANGER
FIRE & POISONOUS GAS HAZARD:
Do not store or operate in an enclosed area. Engine produces CO, an odorless, deadly poison
Do not smoke while refueling
Keep smoking material, sparks and flames away
Do not add fuel when engine is hot or running
Do not fill to top of tank; leave room for fuel expansion
Do not operate while cap is removed or near spilled fuel

76490050
FIRE HAZARD
WARNING

76490001 Shield Missing

76490017 Choke

3 Specifications

Engine

- See your engine owner's manual
- RPM: Full speed 3600 +/- 50 RPM (no load) / Idle 1550 RPM

Electrical System (Electric Start)

- Charging System: Internal stator coil
- Battery Type: Maintenance Free
- Battery Voltage: 12 Volts
- Fuses: Two, 20 amp, blade type

Fuel System

- Capacity: 5.6 gal.
- Type of Fuel: Unleaded regular gasoline, minimum 85 octane. Do not use gasoline containing more than 10% ethanol. Do not mix oil with gasoline.
- Fuel Filter: In line
- Fuel shut-off: On, Off located on tank

Safety Interlock System

- PTO switch must be disengaged, brake engaged and control handles in the neutral and locked position to start the engine.
- Operator must have the brake off and be holding down OPC paddles to engage the PTO or the engine will stop.

Drive System

- Two Hydro Gear 10cc variable displacement piston pumps
- Two Hydro Gear 12 cu. in. wheel motors

Hydro Oil System

- Hydro oil: Fully SYNTHETIC motor oil: Mobil-1 15W-50
- Hydro Filter: Spin-on, 25 micron, no bypass / PN 34490002
- Total Capacity: 2.25 qts

Torque Specifications

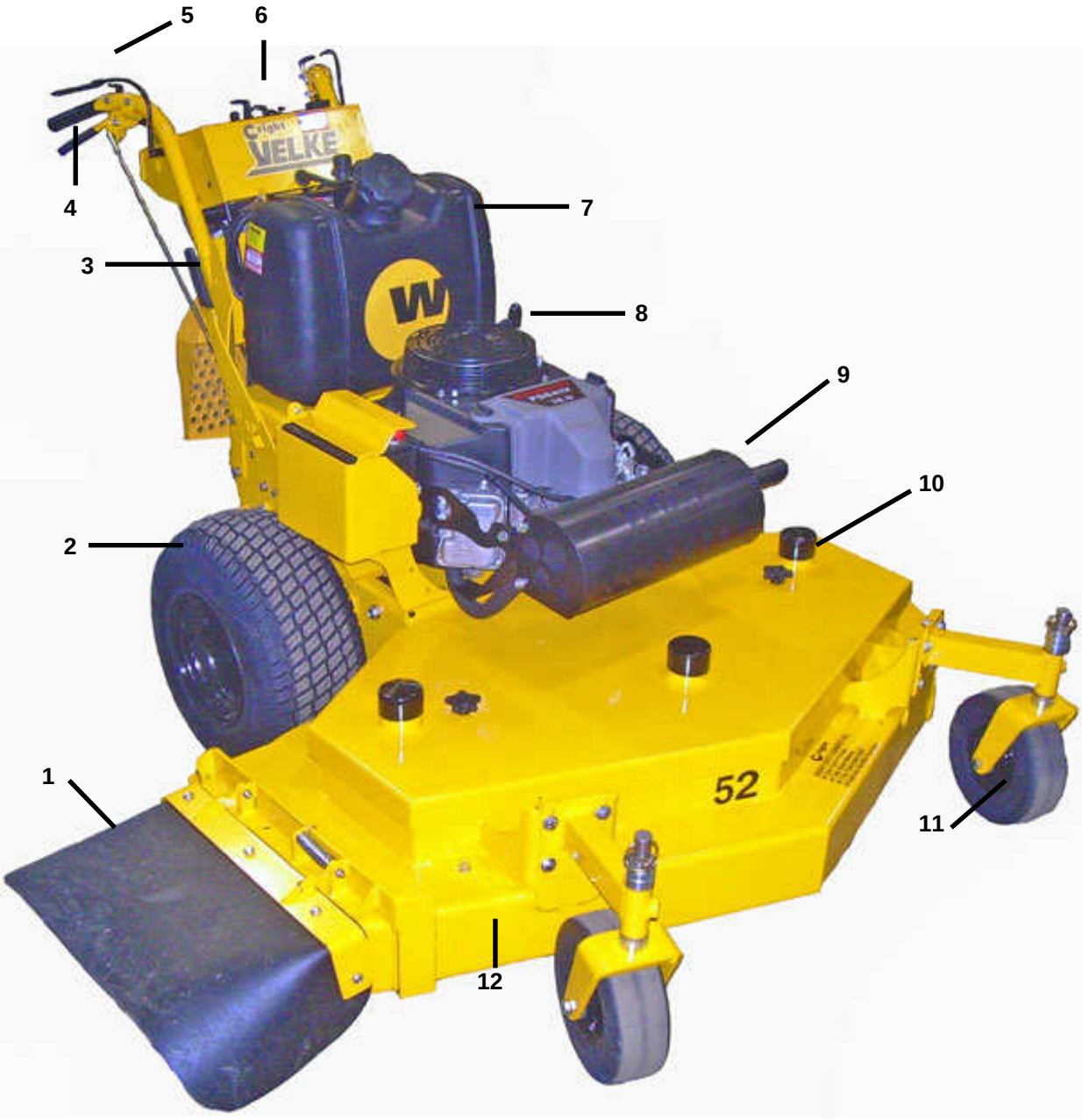
Application	Thread Locker	Torque Range (ft-lbs)
Wheel motor bolts	Loctite 2760	40-50 / 54-68 Nm
Clutch to engine shaft	Loctite 2760	50-55 / 68-75 Nm
Wheel hub to wheel motor	N/A	138-158 / 187-214 Nm
Wheel lug nuts	N/A	80-90 / 108-122 Nm
Split Hub (Spindle & Drive) (Gr 8)	N/A	13-17 / 18-23 Nm
Blade Bolts	N/A	70-80 / 95-108 Nm

32" Velke Hydro PG	
Width, deflector down	45.5"
Width, deflector up	33.5"
Length	72"
Height	41"
Weight	520 lbs
36" Velke Hydro PG	
Width, deflector down	48.5"
Width, deflector up	36.5
Length	74"
Height	41"
Weight	545 lbs
48" Velke Hydro PG	
Width, deflector down	61"
Width, deflector up	49"
Length	69"
Height	41"
Weight	555 lbs
52" Velke Hydro PG	
Width, deflector down	65"
Width, deflector up	53"
Length	71.5"
Height	41"
Weight	575 lbs

4 Machine Description & Overview

The Wright Velke Hydro Pistol Grip is meant to solely cut, bag or mulch grass. The use for any other purpose is not recommended. Do not disconnect any safety switches or remove any decals.

1.Flexible Chute Deflector
2.Rear Drive Tire
3.Parking Brake
4.Steering / Brake Lever
5.OPC Paddle
6.Control Panel
7.Fuel Tank
8.Engine
9.Muffler and Heat Shield
10.Cutter Deck Cover
11.Caster Tire
12.Cutter Deck



4.1 Operator's Area

1.Steering / Brake Lever
2.Neutral Latch Lock
3.OPC Paddle
4.Velke Sulky Release
5.Speed Control Knob
6.Control Linkage
7.Velke Sulky Mounting Point

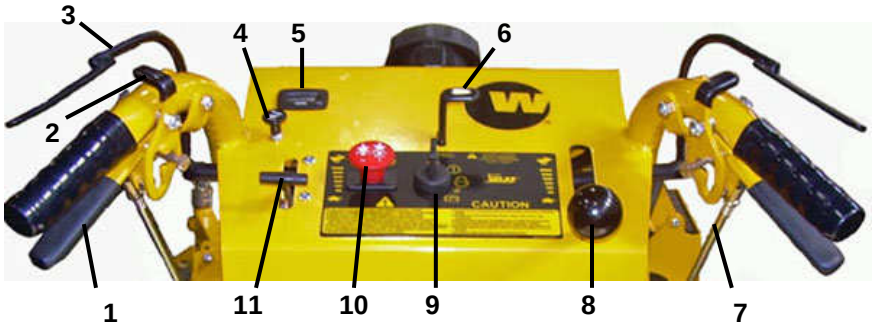
4.2 Model & Serial Location

1.The plate is affixed to the right side of the engine deck in between the battery stand legs.
2.Stated on the plate will be the model and serial number, these will be needed when ordering parts.

4.3 Control Panel & Steering Control Levers

The Velke Hydro Pistol Grip speed and direction are controlled by releasing and squeezing the steering brake levers. The OPC paddles must be held down while releasing both neutral latches. Slowly release the levers to travel forward. Use the Speed Control knob to adjust max speed.

1. Steering / Brake Lever
2. Neutral Latch Lock
3. OPC Paddle
4. Choke
5. Hour Meter
6. Velke Sulky Release
7. Steering Control Linkage
8. Speed Control Knob
9. Ignition Switch
10. PTO Switch
11. Throttle



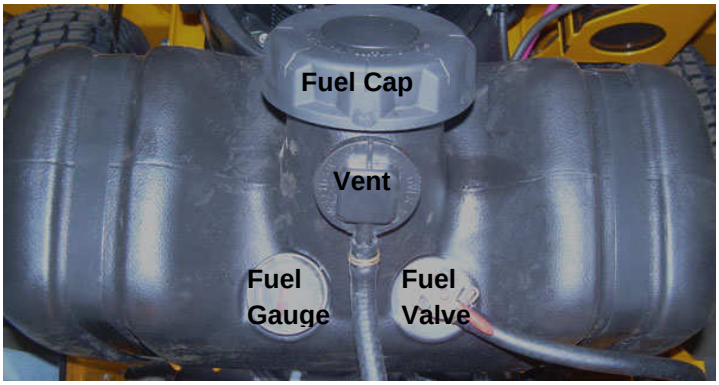
4.4 Digital Hour Meter

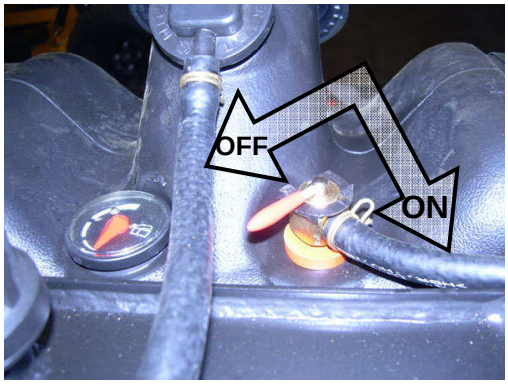
The Velke is equipped with a digital hour meter. Refer to operating/reset instructions below.

The programming specified is:
Default display: Hours
Press once (TMR1): Timer 1, press for 3 sec to reset
Press twice (TMR2): Timer 2, press for 3 sec to reset
Press three times (svc ENG): Will display time remaining until next service point, hold down to reset. The first interval is 8hr, thereafter 100hr. Beginning 5hr before service point the meter will flash “svc ENG, in [remaining hours]” every 5 sec.
Shut off engine: Will display how many times the engine has started.

4.5 Fuel System / Shut-Off Valve

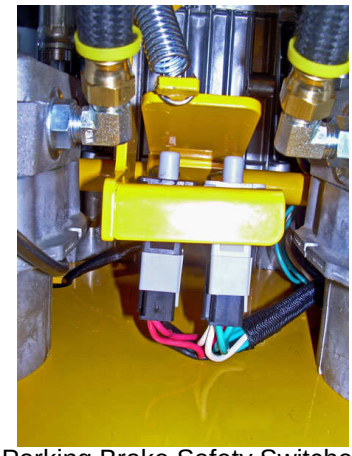
The fuel shut-off valve and fuel gauge is located on top of the fuel tank. The valve should be in the “OFF” position at all times when the mower is not in use. Do Not fill the tank completely. Fill level is 1 inch below the bottom of the fill neck. This will allow for the gas to expand.



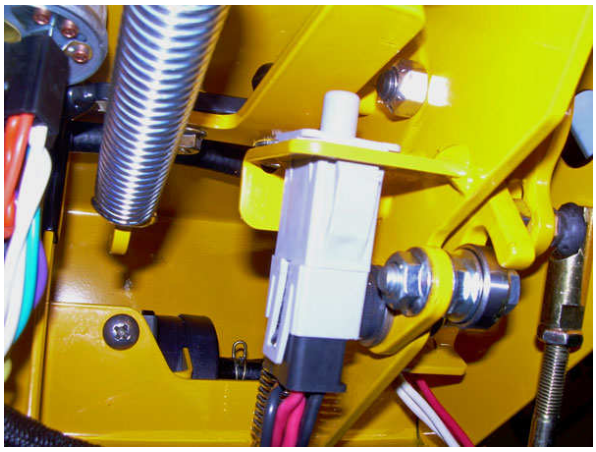


4.6 Safety Interlock System

The Wright Velke Hydro Pistol Grip is equipped with a safety interlock system. The PTO must be disengaged, speed adjustment lever in the “Slow” position, neutral latches in the “Locked” position and the parking brake engaged in order to start the machine.



Parking Brake Safety Switches, located between the Hydro Pumps



OPC Paddle Safety Switch, located under the dash

5 Operating Instructions

WARNING

If you are not completely familiar with the Safety Instruction Manual, read it now before proceeding with the operation of the mower. REMEMBER THERE ARE CERTAIN PRECAUTIONS LISTED IN THIS MANUAL THAT YOU MUST NOW TAKE BEFORE STARTING THE MOWER.

5.1 Inspect Mower Before Each Use

Do not use the mower if any parts are not maintained in good operating condition. Examine all moving parts prior to each use. Look for excessive wear, bald drive tires or worn out front tires (normally smooth), cracks in parts, loose or missing bolts, cotter, linchpin or “hair” pins and replace before operating the mower. Make sure all safety equipment provided with the mower is in good operating order, including all warning decals and the operator-presence device, which stops the engine and blades when the hand-operated Operator Presence Control (OPC) switch is released. To test the OPC, follow the instructions further down in this manual. Ensure that all parts of the hand-operated transmission control system are tight and secure. This is to reduce the possibility that the mower could have a loss of control or safety.

Basic Operation

The following procedures are to guide you through the basic operation of the mower. You should be a qualified mower operator according to the safety section of this manual. If this is your first time, operation should only be done with the assistance of your dealer on a level area. You should go through each step, in the order indicated, every time you start the mower.

5.2 How to Start the Mower

WARNING

Read and understand the safety instructions before attempting to operate your machine.

Use caution when operating this piece of equipment. Practice operating the mower at low speeds and without the blades engaged until familiar with the operation of the controls.

Before starting the engine:

- Check the oil level in the engine and the hydraulic reservoir
- Fill the fuel tank with clean, fresh, unleaded gasoline (use gasoline with an octane of 87 or greater)
- Ensure the fuel valve is in the full open position.
- The blade clutch (PTO) switch must be in the OFF position
- Position the speed adjustment lever to NEUTRAL
- Position the neutral latches in the neutral lock position
- Engage the parking brake
- Ensure the hydraulic pump bypass valves are fully closed (turn clockwise until snug)

Start the engine – choke as needed

Engage the blades (parking brake must be off) by first engaging the operator presence device and then pulling up on the blade clutch (PTO) switch. Push the switch down to disengage the cutting blades. ** For best equipment life, engage the blades between ¾ and full engine throttle.

Release the parking brake and move the speed adjustment lever to the desired ground speed setting.

While squeezing the steering brake levers with both hands, release both neutral latches (one on each handle). Slowly release the levers to travel forward. To make a right turn, squeeze the right hand lever. To make a left turn, squeeze the left hand lever. To travel in reverse, squeeze the levers up beyond the neutral point.
To STOP the mower, squeeze both levers up to the neutral point, engage the neutral latches and move the speed adjustment lever to the neutral position.

5.3 How to Stop and Park the Mower

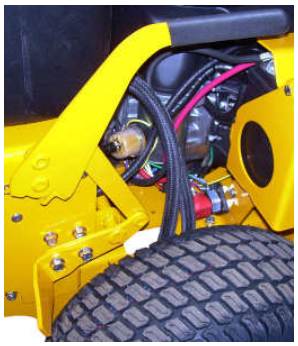
WARNING

Come to a complete stop. Make sure the steering brake levers are in the neutral position with the neutral latches engaged with the levers. If the blades are on, turn them off using the switch on the instrument panel. Place the speed control lever in the neutral position, set the parking brake, reduce the engine speed to idle, shut off the ignition switch to stop the engine and then remove the key from the ignition switch. The mower is now parked. Do not leave unit parked unattended without engaging the parking brake and do not leave the unit parked unattended on a sloped surface.

Neutral Locked Position

Neutral Position

Brake ON



Brake OFF

5.4 How to Drive the Mower Over a Curb

WARNING

To climb a curb, first see the Safety Instructions section of this manual, especially the parts on:

- Initial Operating Safety Guidelines
- Operation In Reverse
- Operation In Forward Direction

To drive up and over a curb turn the blades OFF and then proceed forward to the curb, lift the front wheels off the ground by pushing down on the handlebar and move slowly forward allowing the front wheels to rest on the ground beyond the curb. Then proceed slowly while driving the rear wheels over the curb. To drive over and down a curb proceed slowly forward to the curb and allow the front wheels to slowly roll off of the curb and down to the ground below the curb. Then move slowly forward until the rear wheels roll over the curb and down to the ground below. NEVER stand on the Velke (sulky) while driving over a curb.

5.5 Mowing on Varying Terrain

See the Safety Instructions section of this manual, especially the parts on:

- Initial Operating Safety Guidelines
- Operation On Slopes
- Operation In Reverse
- Operation In Forward Direction
- Operation During Zero-Radius Turns

5.6 How to Adjust the Speed

Set the desired travel speed by moving the control lever forward or backwards.

5.7 How to Perform the Neutral and Tracking Adjustment

WARNING

Find a secure location away from bystanders to perform the drive adjustments (preferably face the mower towards a wall).

Raise the drive wheels off the ground and stabilize the mower.

Start the engine as described in the “Mower Operation” section and let it warm up for a few minutes.

Have a helper hold the OPC down so that both your hands are free to make the adjustments.

Release the parking brake and set the speed control lever to a forward speed greater than 2. This ensures that the pump control bearing is not contacting the speed adjustment cam.

The control levers should remain locked in the neutral position via the thumb locks.

Observe the drive wheels.

If either wheel rotates, loosen the upper and lower steering control rod jam nuts for that side and adjust the rod longer or shorter until the wheel stops. Find the midpoint adjustment in the range that the wheel remains stopped. Retighten the rod jam nuts.

Now set the speed control lever to neutral (first pulled back position).

Release the control levers via the thumb locks.

If the right wheel rotates, loosen the upper and lower speed control rod jam nuts and adjust the rod in or out until the right wheel stops. Find the midpoint of the range that the speed control rod can be adjusted as the right wheel remains stopped. Tighten the jam nuts.

Now if the left wheel rotates, adjust the tracking control knob in or out until the left wheel stops. The tracking control knob is located on the left pump control plate.

The wheels should now go to a neutral position if the steering control levers are locked using the thumb locks and/or the speed control lever is in neutral.

5.8 Straight Line Tracking Adjustments

WARNING

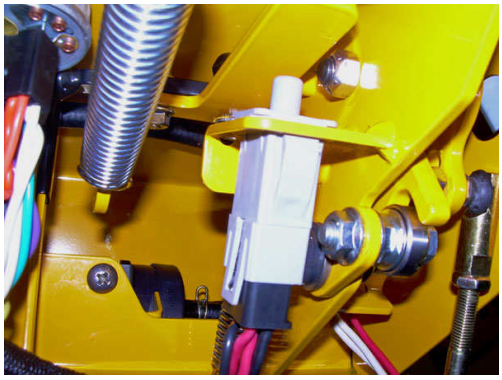
Verify that both rear tires are inflated to the proper PSI.
Find a wide open flat area away from bystanders and objects.
Drive the mower with the speed control set to the most used position.
If the mower pulls to one side, return the speed control lever to neutral and shut off the engine.
If the mower pulled to the left, turn the tracking adjustment knob counterclockwise (left) ½ turn.
Repeat driving the mower and making incremental adjustments after shutting the engine off until the mower tracks straight.
Conversely, if the mower pulls right, turn the tracking adjustment knob clockwise (right).

5.9 How to Test/Use the Blade Clutch/Brake Switch

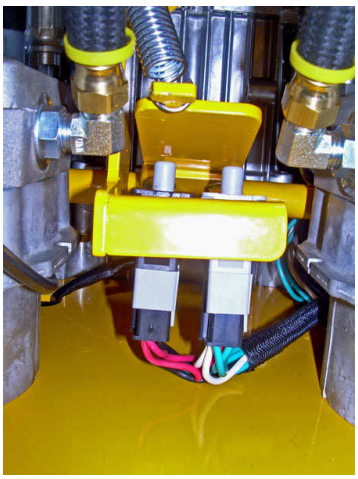
Before testing the blade clutch/brake operation, make sure the area is clear and there is nothing vulnerable to thrown objects from under the mower. No one should be near the mower deck or in its line of discharge. The discharge chute deflector should be in the down position. Move the engine throttle to the highest RPM speed setting. (When mowing, the engine speed should always be at its highest setting. The engine governor will regulate the engine according to the different mowing conditions at that setting.) Engage the OPC switch and turn on the blade clutch switch. Run blades for a minute or so. Try engaging and disengaging the blades a few times about 10 seconds apart. If the blades do not start and stop in a few seconds each time, service the blade brake system or contact your local Wright dealer. Under mowing load, the clutch's longevity will be the greatest at the highest RPM setting.

5.10 How to Test the Operator Presence Control (OPC) Switch

Before beginning this test, secure a large open area that is free of obstacles or hazards.
To test the OPC switch start the engine using the normal starting procedures, release the parking brake and place the speed control in the slowest speed setting. While engaging the OPC lever(s) engage the blades by pulling up on the PTO blade clutch switch. Allow the mower to start moving forward and then release the mower handles. If the engine doesn't stop, then service the OPC system.



Located under the dash
OPC for Paddles
PN 92410005, Switch, VK, NO/NC Grey



Located Between the Hydro Pumps
OPC for Brake
Left=PN 52410006, Switch, VK, NO/NO, Blk & Gry
Right=PN 92410005, Switch, VK, NO/NC Grey

6 Service and Adjustments

6.1 Tire Maintenance and Pressure

WARNING

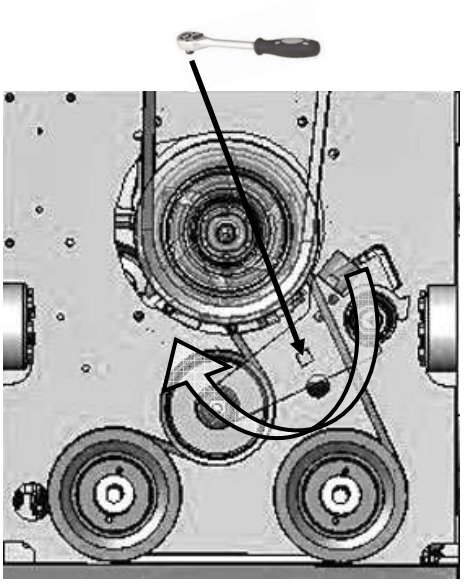
Excessively worn tire tread is dangerous on all hills. Replace drive tires with less than 3/32” of any tread groove left. Use tires with the tread pattern recommended by Wright Mfg., Inc. only. Keep the tire pressure at the proper level. Higher pressures will cause the tires to have less traction which will force you to go slower, with less safety and give you a harder ride. The front casters are equipped with non-pneumatic tires and do not require any air. They do not have any tread but should be replaced when excessively worn.

6.2 Belt Tension Adjustment

The pump drive belt is self-adjusting, and requires no adjustment, just replacement. The blade drive belt is self-adjusting also and requires no adjustment, just replacement.

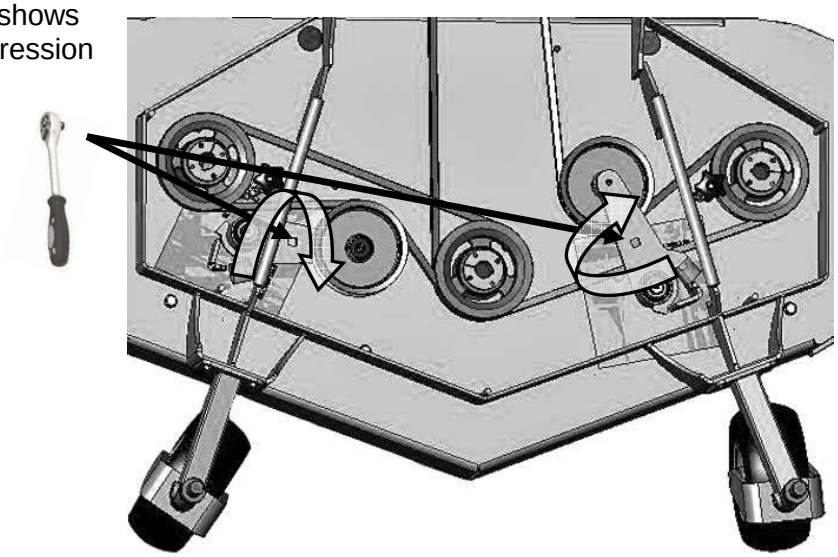
6.2.1 Replacing the Drive Belt

- Stop the engine, remove the key and wait for all moving parts to stop.
- Remove the deck cover and remove the engine to blade belt. (Refer to replacing the cutter deck belt section)
- Raise and secure the machine
- Remove the belt using a ½” ratchet and extension to relieve the belt tension.
- Reinstall in reverse order. Figure shows belt routing and spring compression direction.



6.2.2 Replacing the Cutter Deck Belts

- Stop the engine, remove the key and wait for all moving parts to stop.
- Lower deck to the lowest setting.
- Remove the deck covers.
- Remove the belt by using a ½” ratchet and extension to relieve the belt tension.
- Reinstall in reverse order. Figure shows belt routing and spring compression direction.



6.3 How to Move the Mower if the Engine Won't Start

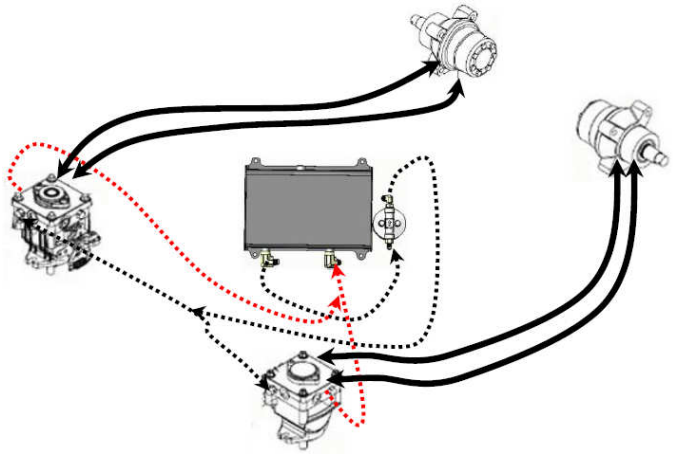
Rotate both of the hydro bypass valve levers on the side of each hydraulic pump about ½ turn counterclockwise. It is important not to over tighten these levers. Damage may occur to the pump if this valve is over tightened.

6.4 Hydraulic System

WARNING

Whenever servicing the hydraulic system, it is of the utmost importance to keep any dirt or debris from getting into the system. Clean off all parts before disassembly and assembly. When any of the hydraulic parts are disconnected or removed or when the oil is changed, air must be bled from the system.

- Low Pressure Hose .....
- High Pressure Hose ——
- Arrow Indicates Direction of Flow →



6.5 Bleeding Air from the Hydraulic System

If air is entrained in the system, loss of power, excessive heat, and damage to the hydraulic pumps may occur. First, make sure the oil level in the reservoir is correct. Use fully synthetic oil: Mobil1 15W-50. Lift the mower so that the rear wheels are off the ground. Be careful to support the mower so that it will not fall or tip while the system is bled of air. With the bypass valves open and the engine running, slowly move the control levers back and forth five or six times. Now close the bypass valves and with the engine running, slowly move the control levers back and forth five or six times. It may be necessary to repeat the above steps until all the air is purged and the rear wheels are turning at normal speed. After purging is complete, adjust the oil level in the reservoir if necessary.

6.6 Hydraulic Oil Tank Check / Fill

Checking Oil Level

1. Ensure mower is on a level surface.
2. Remove hex socket plug from oil level port on the right side of the tank.
3. Hydro oil should be at the bottom of the threads.

Filling Oil Level

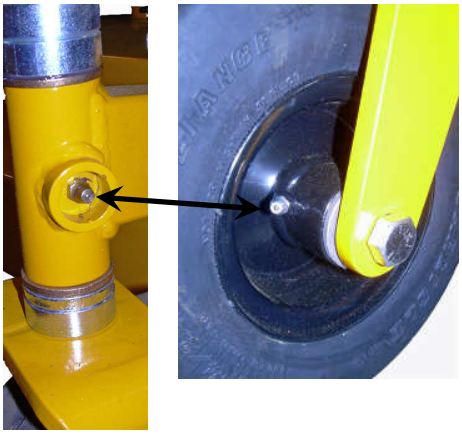
1. Remove hex socket plug
2. Using a funnel, fill tank through oil level port until oil reaches bottom threads of port.

6.7 Lubrication

Grease with No. 2 general purpose lithium base or molybdenum base grease.

- Set parking brake, stop the engine and remove the key.
- Clean grease fittings with a rag.
- Connect grease gun to fitting and pump until grease begins to ooze out from the bearings.
- Wipe off excess grease.
- *Do not use spray lube of any kind on choke and/or throttle cables.*
  - **Service intervals:**
    - **First 8 hours**
    - **Every 25 hours**

Also see Maintenance chart



6.8 Battery Service (Electric Start Only)

The battery is 12V and is a maintenance free battery. Charge the battery only if it will not start the mower properly. Remove the battery from the mower before charging. Follow the instructions of the battery charger for proper and safe charging of the battery.

Remove Nut & Bolt and slide lid from slotted end.

Positive & Negative Terminals

6.9 Cutting Blades

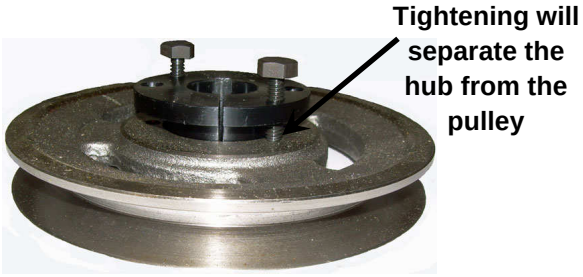
In order to maintain the best cut, it is important that the blades are well sharpened and not damaged. Bent or cracked blades or blades with large nicks need to be replaced. Blades must be balanced after sharpening.

To change the blades:

1. Stop engine, remove the key and wait for all moving parts to stop.
2. Engage the parking brake.
3. Lift the front of the mower and secure in the raised position with jack stands.
4. Remove the deck cover.
5. While securing the bolt head under the deck, remove the nut from the top of the spindle by rotating clockwise.
6. Install new or re-sharpened blade. (Ensure the blade spacers are reinstalled with the same qty and location)
7. Torque nut to 70-80 ft lbs.

6.10 Spindle and Drive Pulley Split hub R&R

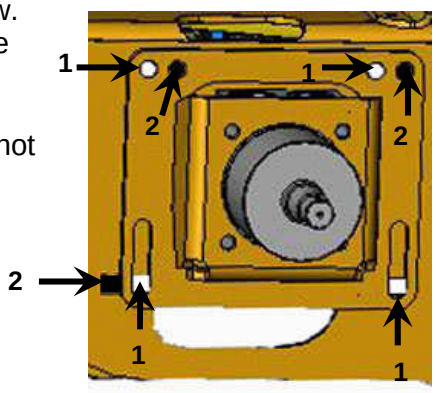
- Remove 2, ¼" bolts from split hub and install in threaded holes in hub.
- Slowly tighten each bolt, alternating as you tighten bolts against the pulley.
- The hub will separate from the pulley.
- Replace grade 8 bolts and install in reverse order using the assembly holes to tighten hub onto pulley and spindle shaft.



6.11 Hydraulic Motor Support Adjustment

The various holes in the mower frame and the hydraulic motor supports may be used to make a fine forward/rearward adjustment to the balance of the all Velke Mowers except the 32" (the 32" only moved up and down). This adjustment should always be made in combination with the coarse height-of-cut adjustment and anti-tip roller adjustment as described below. When the motor supports are set in the forward position, the Velke Mower will be balanced lighter in the front than when set in the rearward position, giving more traction to the drive tires. Heavy operators (over 250 pounds) may find that the rearward position (not available on the 32") helps keep the front of the mower down.

1.Factory setting, forward holes.
2.Optional Rearward Adjustment holes.



6.12 Blade Adjustments and Height-of-Cut

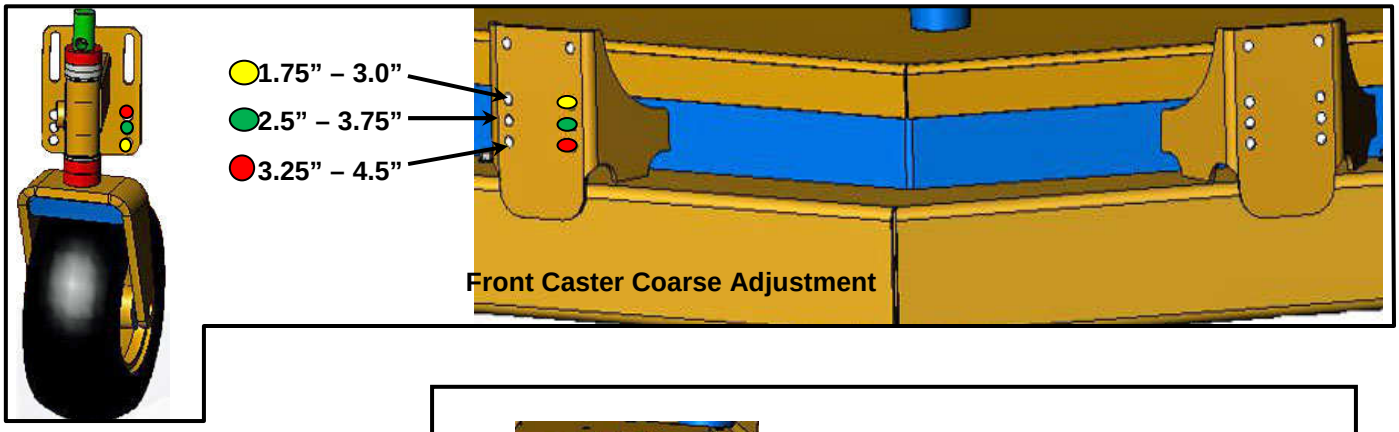
Before Adjusting the Height-of-Cut be sure of proper air pressure in all four tires and check for even tire wear. The height-of-cut can be adjusted the following ways:

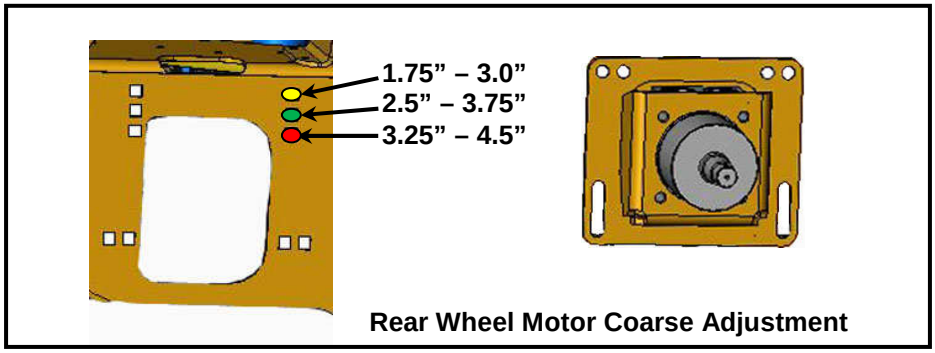
•Coarse Adjustment: For the coarse adjustment the rear wheels, the front casters should be adjusted at the same time. Adjust the rear wheel motor supports equally in one of the three settings up or down 0.75" each in a 1.5" total range.

a. Use the highest holes in tractor frame for cutting heights of 1.75"-3.0".
b. Use the middle holes in tractor frame for cutting heights of 2.5"-3.75", factory setting.
c. Use the lowest holes in tractor frame for cutting heights of 3.25"-4.5".

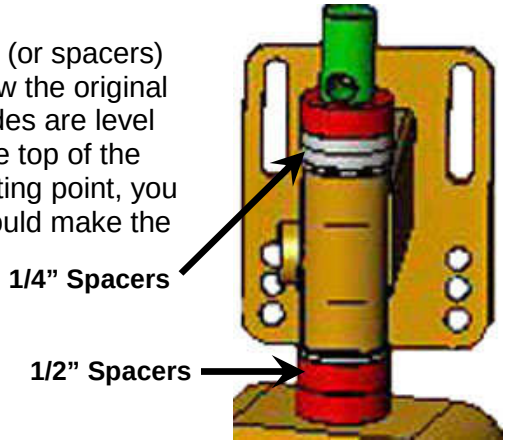
Adjust the front caster arms at their respective support brackets equally in one of the seven settings up or down 0.25" each through a 1.5" total range.

a. This should be done with two shims (or spacers) on the bottom and one shim on the top of the caster support arm.
b. The front-to-rear leveling of the blades should be between level (preferred) to .25" lower at the front of the blades but never higher at the front.
c. Use the lowest holes in tractor frame for heights of 3.25"-4.5".





•Temporary Height-of-Cut Adjustment: Using the caster shims (or spacers) you can adjust the blades downward temporarily .5” or 1” below the original coarse setting as described above. This assumes that the blades are level with two shims (or spacers) on the bottom and one shim on the top of the caster support arm. With the blades level at this assumed starting point, you should never move all of the shims to the bottom since that would make the blades higher at the front.



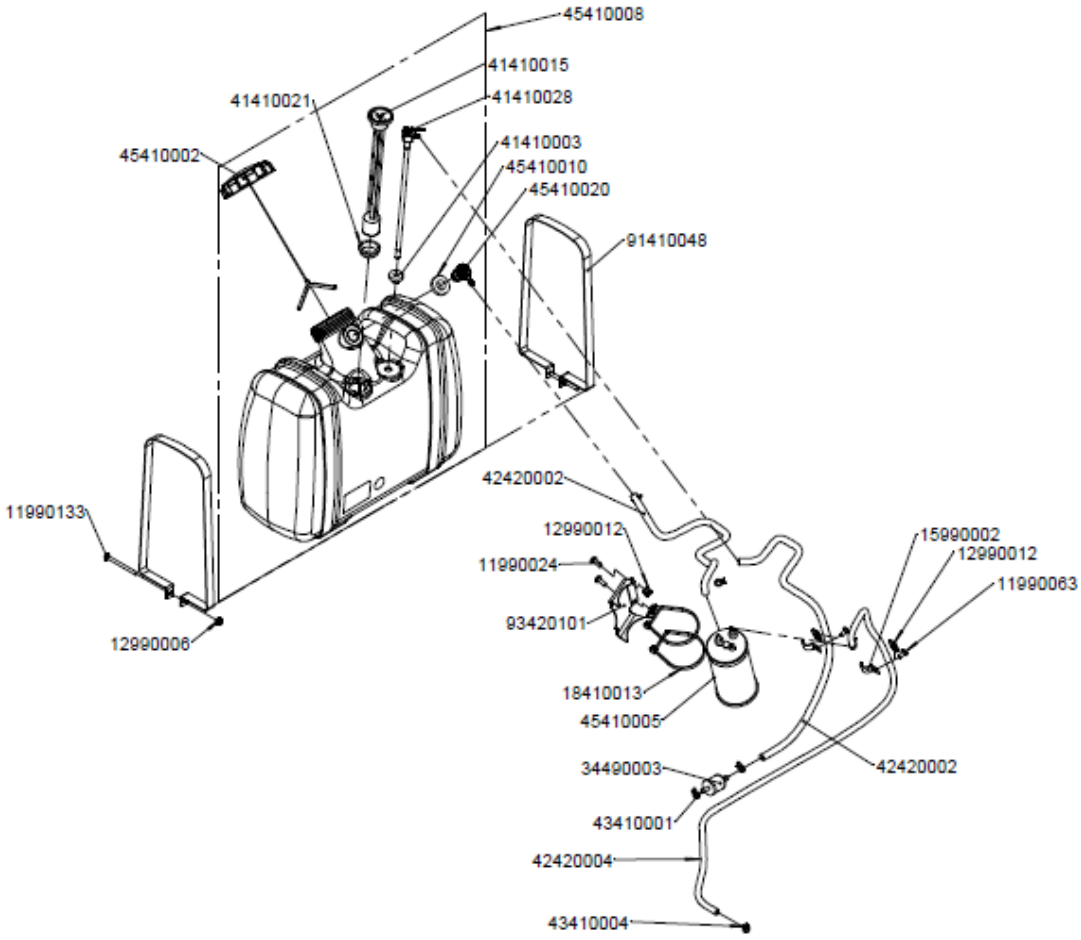
The angle of attack of the blades should always be level or lower at the front. This makes the blade cut the grass only once and saves fuel and wear on the whole mower. It also allows more efficient mowing and grass catching or dispersal. If you mow in an area of the country where the lawn is very thick and spongy you may have to set these two adjustments as they would appear on the grass and not on a hard surface due to the tires “floating” up on or “sinking” down into the lawn.

•Fine Adjustment: Adjust the blades equally in five settings up or down 0.25” each in a 1.25” total range. The shims on the blade bolts are moved from under the spindle to the top of the spindle. If possible, leave at least one shim at the top and the bottom of the spindle shaft. Using the maximums and minimums of these methods gives you a total range of 2.75” from 1.75” to 4.5” in eleven distinct settings. The factory setting is 3” when measured to a hard floor surface at the front of the deck.

6.13 Fuel Evaporation System

All Wright Velkes need to have this mandatory feature.

- Do Not alter or remove
- Do Not fill past the “Max Fill Level” line shown in figure.
- Over-filling could result in clogging the roll-over vent and/or contaminating the purge canister.
- The vapor canister is located under the dash.
- Inspect and clean dust filter every 500 hours or annually.



6.14 Transporting

Use a heavy duty trailer or truck when transporting the Velke Hydro PG. Lock brake and block wheels. Securely fasten the unit to the trailer or truck with straps, chains, cable or ropes.

6.15 Loading and Unloading

Use extreme caution when loading and unloading units on/off trailers or trucks. One full width ramp that extends beyond the rear tires is recommended rather than individual ramps for each side of the unit. The ramp should be long enough so that the angles between the ramp and the trailer or truck does not exceed 15 degrees. A steeper angle may cause the mower deck components to get caught as the unit moves from ramp to trailer or truck. Never attempt to turn the mower around on the ramp. Avoid sudden acceleration when driving up a ramp and sudden deceleration when backing down a ramp.

6.16 Cleaning the Mower

The underside of the mower deck should be checked and cleaned twice daily and more often if the grass being mowed is lush or wet. The entire mower should be cleaned daily at the end of the work day. Cleaning should be done with a leaf blower or low-pressure compressed air. Wash with water only when necessary and do not use a pressure washer or nozzle as the water can enter bearings and electrical connections causing an electrical short, rust and corrosion. When washing with water, avoid spraying near the hydro cap and do so when the unit has cooled down. Washing a hot machine can cause various unseen system damage. If water is used for cleaning, immediately dry it with a leaf blower or low-pressure compressed air and run with blades engaged for approximately 10 minutes. Once the wash is complete, always lubricate and grease all applicable areas.

6.17 Kawasaki Engine Manual / Maintenance

It is very important that all users of this unit read and understand the Kawasaki Engine Owner's Manual. This manual contains; safety awareness, emissions, maintenance and warranty information that is critical for the care of your Kawasaki engine. Below is the periodic maintenance chart directly from the Kawasaki Owner's Manual, which is included with the sale of the Velke.

MAINTENANCE

Maintenance, replacement, or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual.

Periodic Maintenance Chart

⚠ WARNING

Prevent accidental starting during engine service by removing the spark plug caps.

NOTE

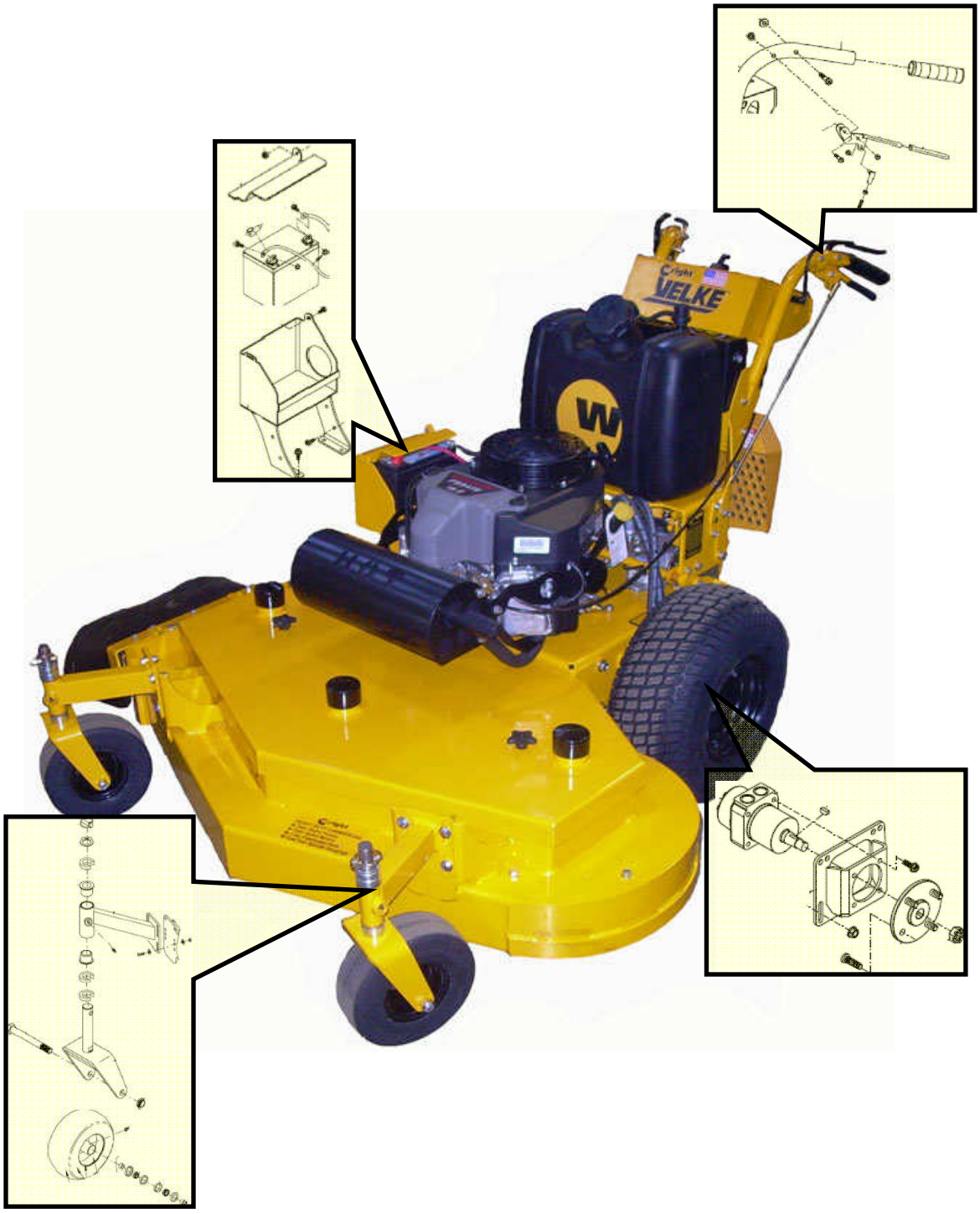
○ *The service intervals can be used as a guide. Service more frequently as necessary by operating conditions.*

♦ : Service more frequently under dusty conditions.
K : Service to be performed by an authorized Kawasaki dealer.

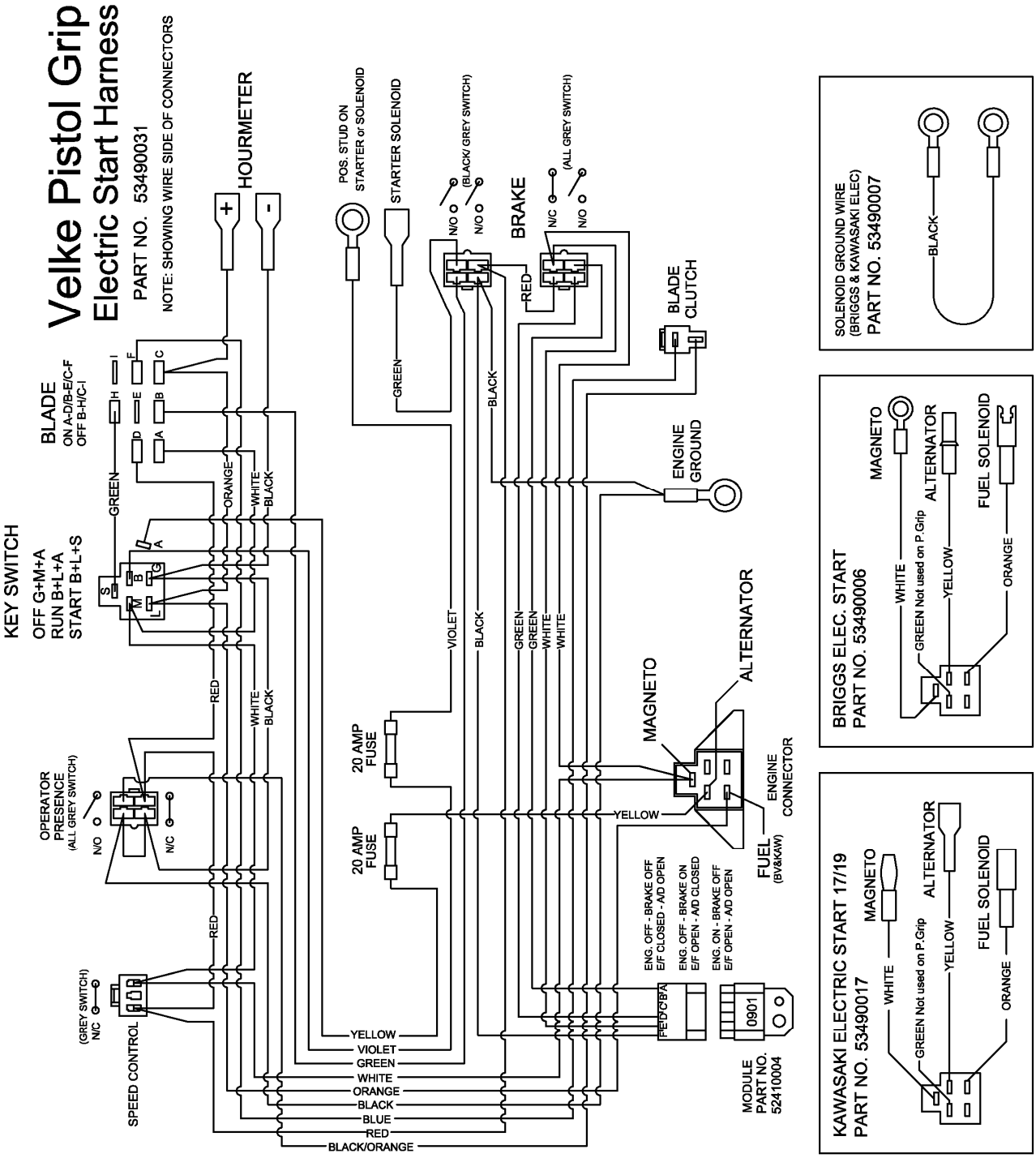
MAINTENANCE	INTERVAL						
	Daily	First 8 hr.	Every 100 hr.	Every 200 hr.	Every 250 hr.	Every 300 hr.	Every 500 hr.
Check and add engine oil.	•						
Check for loose or lost nuts and screws.	•						
Check for fuel and oil leakage.	•						
Check battery electrolyte level.	•						
♦ Check or clean air inlet screen.	•						
♦ K Clean dust and dirt from cylinder and cylinder head fins.			•				

MAINTENANCE	INTERVAL						
	Daily	First 8 hr.	Every 100 hr.	Every 200 hr.	Every 250 hr.	Every 300 hr.	Every 500 hr.
Tighten nuts and screws.			•				
Change engine oil.		•	•				
♦ Check and clean oil cooler fins.			•				
Clean and regap spark plugs.			•				
Change oil filter.				•			
♦ Replace air cleaner primary element.					•		
♦ Check air cleaner secondary element.					•		
K Clean combustion chamber.						•	
K Check and adjust valve clearance.						•	
K Clean and lap valve seating surface.						•	
♦ Replace air cleaner secondary element.							•

7 Component Breakdown



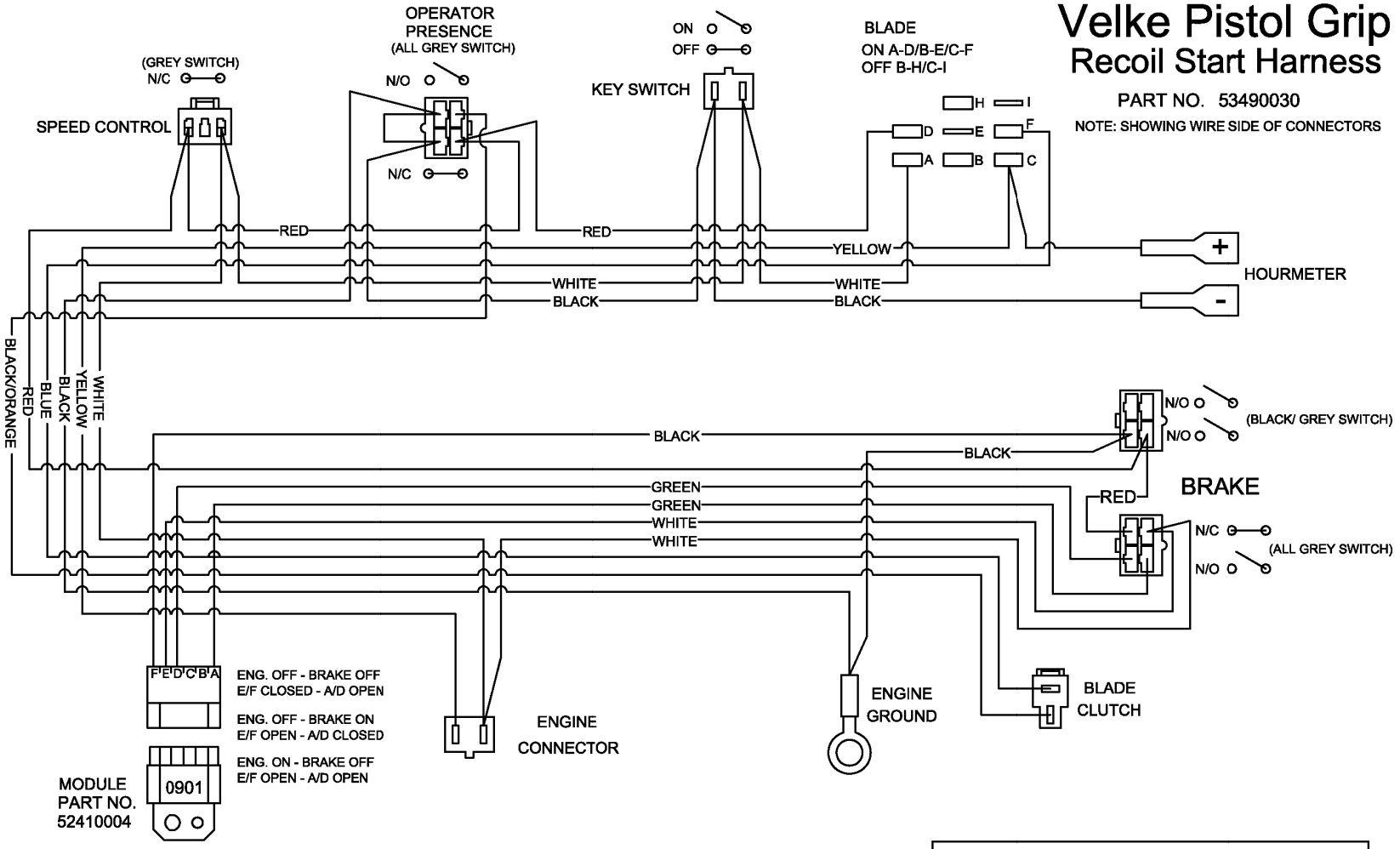
8 Electrical Schematics

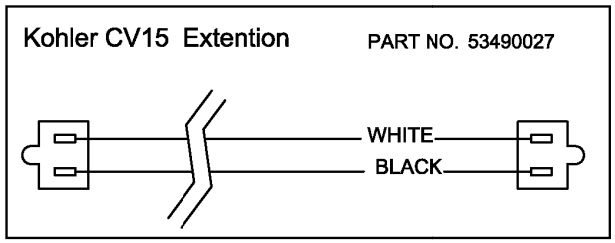


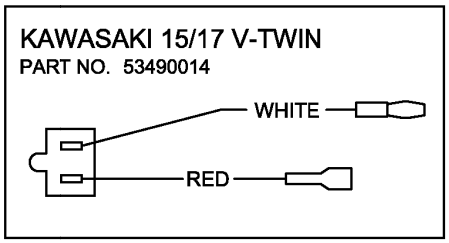
Velke Pistol Grip
Recoil Start Harness

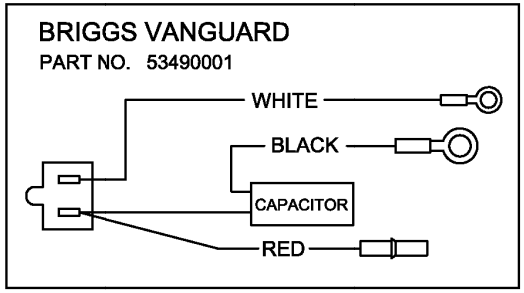
PART NO. 53490030

NOTE: SHOWING WIRE SIDE OF CONNECTORS









9 Maintenance Chart

Maintenance Interval Chart

MAINTENANCE ITEM	ENGINE ITEMS	SEE NOTE BELOW	FIRST 8 HOURS	DAILY	EVERY 25 HOURS	EVERY 100 HOURS	EVERY 200 HOURS	EVERY 300 HOURS	ANNUALLY
Inspect for cracks in frame, cutter deck or other steel parts		*3	X						X
Inspect all belts for wear, adjustment and alignment			X		X				X
Check all bolts and nuts for tightness (tighten as necessary)			X	X					X
Lubricate hand control lever pivot shafts with waterproof grease			X						X
Check hydraulic oil reservoir level and fill as needed - Use SYNTHETIC oil - Mobil1 15W-50		*2	X	X					X
Grease caster wheel bearings			X	X					X
Check tire pressure; Rear tires 18-22 psi. Front tires are a non-pneumatic style and do not require air pressure			X	X					X
Check and clean engine cooling fins	Engine	*1	X		X				X
Lubricate Operator Presence Control pivots and control rod with waterproof grease			X		X				X
Replace fuel filter	Engine	*1	X			X			
Lubricate choke control cable (if equipped) with WD-40			X			X			X
Check engine and add as needed	Engine	*1		X					X
Check for fuel or oil leakage - correct as needed	Engine	*1		X					X
Check and clean air intake screen	Engine	*1		X					X
Clean engine blower screen and fins with compressed air	Engine	*1		X					X
Clean mower with compressed air-do NOT use a pressure washer				X					X
Check for loose hardware (e-clips, snap rings, nuts, etc.)				X					X
Check blades for wear and sharpness (sharpen and balance or replace as necessary)				X					X
Check and adjust tire pressures to no more than maximum pressure listed on tire and maintaining good traction and comfort				X					X
Clean out debris under blade belt cover				X					X
Scrape clean underside of cutter deck				X					X
Check blade mounting bolts for proper tightness				X					X
Check blade spindle mounting bolts for proper tightness				X					X
Clean air cleaner foam element	Engine	*1		X					X
Inspect tires, replace as needed					X				X
Inspect and tighten all hydraulic hoses					X				X
Adjust parking brake shoes to firmly stop wheels when engaged					X				X
Clean air cleaner paper element	Engine	*1		X					X
Clean and re-gap spark plug (replace as necessary)	Engine	*1				X			X
Change engine oil	Engine	*1	X			X			X
Change engine oil filter	Engine	*1					X		X
Replace air cleaner paper element	Engine	*1					X		X
Replace hydraulic oil filter with Original Wright filter									X
Completely inspect for excessive wear in all parts of mower, including control system (replace worn parts)							X		X
Inspect and replace (if necessary) worn main cutter deck idler pulleys or pulley bearings (if applicable)							X		X
Replace (if necessary) excessively worn caster wheels and roller bearings							X		X
Remove battery and clean battery, battery box and battery cable ends (if applicable)							X		X
Clean combustion chamber	Engine	*1						X	
Check and adjust valve clearance	Engine	*1						X	
Clean and lap valve seating surface	Engine	*1						X	

NOTES:

***1** - Refer to Engine Manufacturers Owners Manual

***2** - Hydraulic fluid level should be 1"-2" below the top of the oil fill

***3** - Contact an authorized Dealer immediately if any cracks are found

The service intervals indicated are to be used as a guide. Service should be performed more frequently as necessary by operating conditions

Maintenance Record

Date	Maintenance/Service Performed	Unit Hours	Shop/Technician

WRIGHT MANUFACTURING, INC. POWER EQUIPMENT LIMITED WARRANTY

THIS WARRANTY SUPERSEDES ALL PREVIOUS ON UNITS WITH A RETAIL SALES DATE ON OR AFTER 04/01/05

Wright Manufacturing, Inc. (hereinafter: WMI) warrants to the original owner that the new WMI mower accompanying this document will be free from manufacturing defects in materials or workmanship subject to the following limitations and exclusions. Any part of the WMI commercial mower manufactured by WMI and found, in the reasonable judgment of WMI, to be defective in materials or workmanship, will be repaired or replaced by an Authorized WMI Service Dealer without charge for parts and (except as excluded below) labor. This Warranty is limited to the original Owner and the mower this document was provided with and is not transferable. Dealer demo units with less than fifty hours when first retailed shall also be covered by this limited warranty. Proofs of Purchase, Authorized Dealer performed Pre-Deliver Service and the First Eight Hour Service will be required by the Authorized WMI Service Dealer to substantiate any warranty claims. All WMI warranty work must be performed by an Authorized WMI Service Dealer and item must be delivered to the dealer prior to the expiration of the warranty period. This Warranty is limited to the following specified periods from the date of the original retail purchase for defects in materials or workmanship and will commence upon the date of original retail purchase. This warranty shall apply only if the warranty registration form has been completed and returned to Wright Manufacturing, Inc. within 14 days from the date of original retail purchase. This warranty includes only the cost of parts and labor (when applicable). This warranty applies only to the replacement of defective or otherwise warrantable WMI OEM parts being replaced with WMI OEM parts.

- All parts and components (except as noted below) – 2 years
- Belts – 90 days
- Battery – 90 days
- Engine – warranty covered by engine manufacturer and handled through the respective Authorized engine Dealers

Exclusions:

Any damage or deterioration due to normal use, wear and tear or exposure
All filters, engine oil, hydraulic oil, tires and tubes
Bent, fractured or broken parts occurring through impact or hard use
Clutch: linings, anti-rotation failure or other failure due to improper replacement installation
Cost of regular maintenance service, parts or adjustments
Worn bearings (other than spindle bearings; see above)
Worn bushings, cotters, clips, pins and retainers
Grease fittings/zerks
Paint, paint fading, cosmetic imperfections and steel surface imperfections
Fabric, cushion and rubber grip wear or damage
Cutting blades, light bulbs, fuses
Damage due to loose pulleys on shafts
Damage due to loose wheel hubs on tapered hydraulic motor shafts
Fire Damage
Abrasion or corrosion wear or damage

Repair Parts Replaced During Original Warranty

All Repair parts (excluding wear or otherwise excluded items) installed during the warranty period are warranted until the end of the respective original period according to the categories above except in the case that the respective original warranty period expires in less than ninety (90) days after the installation of the part(s). If this happens then the parts are warranted for a total of ninety (90) days from the time of their installation.

Rental Use

The above warranty periods are limited to maximum of ninety (90) days for mowers that are used for rental purposes.

The WMI mower, including any defective part, must be returned to an Authorized WMI Service Dealer within the warranty period. The expense of lost production time and delivering the mower to the Authorized WMI Service Dealer for warranty work and the expense of returning it to the Owner after repair will be paid for by the Owner. WMI's responsibility is limited to making the required repairs and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any WMI mower. This Warranty does not apply to any mower that was delivered to an Owner prior to the Pre-Delivery Service as specified in the Owner's Manual. This Warranty does not apply to any mower that was shipped in a crate to the Owner or delivered to the Owner by non-employees of an Authorized Dealer. For the Owner's protection and a valid Warranty, please note: WMI does not permit Authorized Dealers to make non-face-to-face deliveries of the mower and any who are found doing so are subject to immediate cancellation as Authorized Dealers. This Warranty does not cover any mower that has been subject to misuse, neglect, negligence, burning in any fire, an accident, or that has been operated or maintained in any way contrary to the operating and maintenance instructions as specified in the Owner's Manual. The Warranty does not apply to any damage to the mower that is the result of improper maintenance or to any mower or parts that have not been assembled or installed as specified in the Owner's Manual. The Warranty does not cover any mower that has been altered or modified changing performance or durability. In addition, the Warranty does not extend to repairs made necessary by normal wear, or by the use of parts or accessories which, in the reasonable judgment of WMI, are either incompatible with the WMI mower or adversely affect its operation, performance or durability.

WMI reserves the right to change or improve the design of any mower without assuming any obligation to modify any mower previously manufactured.

All other implied warranties are limited in duration to the two (2) year warranty period or ninety (90) days for mowers used for rental purposes. Accordingly, any such implied warranties including merchantability, fitness for a particular purpose, or otherwise, are disclaimed in their entirety after the expiration for the appropriate two (2) year or ninety (90) day warranty period. WMI's obligation under this Warranty is strictly limited to the repair or replacement of defective parts and WMI does not assume, or authorize anyone to assume for them, any other obligation. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply.

WMI assumes no responsibility for incidental, consequential or other damages including, but not limited to, expense for gasoline, expense of delivering the mower to an Authorized WMI Service Dealer and expense of returning it to the Owner, damage by fire, mechanic's travel time, telephone charges, rental of a like product during the time warranty repairs are being performed, travel, loss or damage to personal property, loss of revenue, loss of use of the power equipment, loss of time or inconvenience. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This Warranty applies to all WMI mowers sold in the United States of America and Canada.

For the location of the Authorized WMI Service Dealer nearest you or other information, such as, Parts Lists and Owner's Manuals visit our website at: www.wrightmfg.com

Wright Manufacturing, Inc.
4600-X Wedgewood Blvd.
Frederick, MD 21703

FEDERAL AND CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The United States Environmental Protection Agency (EPA), California Air Resources Board (CARB) and Wright Manufacturing, Inc. (WMI) are pleased to explain the evaporative emission control system (EECS) warranty on your 2012 - 2013 commercial mower. In the United States, new equipment that use small off-road engines must be designed, built and equipped to meet the Federal's stringent evaporative emissions standards. In California, new equipment that use small off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. WMI must warrant the EECS on your commercial mower for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your equipment.

Your EECS may include parts such as the carburetor, fuel-injection system, the ignition system, catalytic converter, fuel tanks, fuel lines, fuel caps, valves, canisters, filters, vapor hoses, clamps, connectors, and other associated emission-related components.
Where a warrantable condition exists, WMI will repair your commercial mower at no cost to you including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE:

This evaporative emission control system is warranted for two years. If any evaporative emission-related part on your equipment is defective, the part will be repaired or replaced by WMI.

OWNER'S WARRANTY RESPONSIBILITIES:

- As the commercial mower owner, you are responsible for performance of the required maintenance listed in your owner's manual. WMI recommends that you retain all receipts covering maintenance on your commercial mower but WMI cannot deny warranty solely for the lack of receipts.
- As the commercial mower owner, you should however be aware that WMI may deny you warranty coverage if your commercial mower or a part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.
- You are responsible for presenting your commercial mower to WMI's distribution center or service center as soon as the problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days. If you have a question regarding your warranty coverage, you should contact WMI's warranty claims department at (301) 360-9810.

GENERAL EMISSIONS WARRANTY COVERAGE:

WMI warrants to the ultimate purchaser and each subsequent purchaser that the commercial mower is:

Designed, built and equipped so as to conform with all applicable regulations; and

Free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to that part as described in WMI's application for certification.

The warranty period begins on the date the commercial mower is delivered to an ultimate purchaser or first placed into service. The warranty period is two years.
Subject to certain conditions and exclusions as stated below, the warranty on emission-related parts is as follows:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions supplied, is warranted for the warranty period stated above. If the part fails during the period of warranty coverage, the part will be repaired or replaced by WMI according to subsection (4) below. Any such part repaired or replaced under warranty will be warranted for the remainder of the period.

(2) Any warranted part that is scheduled only for regular inspection in the written instructions supplied is warranted for the warranty period stated above. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.

(3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions supplied is warranted for the period of time before the first scheduled replacement date for that part. If the part fails before the first scheduled replacement, the part will be repaired or replaced by WMI according to subsection (4) below. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty provisions herein must be performed at a warranty station at no charge to the owner.

(5) Notwithstanding the provisions herein, warranty services or repairs will be provided at all of our distribution centers that are franchised to service the subject engines or equipment.

(6) The commercial mower owner will not be charged for diagnostic labor that is directly associated with diagnosis of a defective, emission-related warranted part, provided that such diagnostic work is performed at a warranty station.

(7) WMI is liable for damages to other engine or equipment components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the commercial mower warranty period stated above, WMI will maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of WMI.

(10) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts by the ultimate purchaser will be grounds for disallowing a warranty claims. WMI will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

WARRANTED PARTS:

The repair or replacement of any warranted part otherwise eligible for warranty coverage may be excluded from such warranty coverage if WMI demonstrates that the commercial mower has been abused, neglected, or improperly maintained, and that such abuse, neglect, or improper maintenance was the direct cause of the need for repair or replacement of the part. That notwithstanding, any adjustment of a component that has a factory installed, and properly operating, adjustment limiting device is still eligible for warranty coverage. The following emission warranty parts listed below are covered:

(1)Fuel Tank

(2)Fuel Cap

(3)Fuel Valve

(4)Fuel Line

(5)Fuel Line Fittings

(6)Fuel Line Clamps

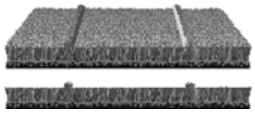
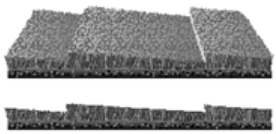
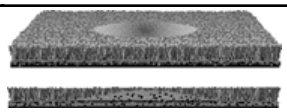
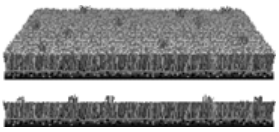
(7)Vapor Hoses

(8)Carbon Canister

(9)Carbon Canister Mounting Brackets

(10)Carburetor Purge Port Connector

Cut Quality and Mowing Tips

Problem	Description	Possible Cause	Solution
Streaking	Streaking is when strips of uncut grass are left behind.	Blades are not sharp	Sharpen blades
		Blades are worn down too far	Replace blades
		Engine RPM is too low	Mow at full throttle
		GROUND SPEED IS TOO FAST	SLOW DOWN
		Deck is plugged with grass	Clean deck
Stepped Cutting	Stepped cutting is sharp ridges left in the lawn surface. Stepped cutting is ussually caused by deck damage or misadjustment, or blade damage	Deck is not leveled correctly	Level the deck
		Tires are not properly installed/inflated	Check and inflate tires
		Blades are damaged	Replace blades
		Deck shell is damaged	Repair or replace deck
		Spindle is bent or loose	Repair or replace spindle
		Blades are installed incorrectly	Reinstall the blades correctly
Scalping	Scalping is when the deck comes close to or hits the ground. Scalping can be caused by the deck is misadjusted, uneveness in the lawn, or by deck bounce because ground	Lawn is uneven or bumpy	Roll or level the lawn
		Deck cutting hieght is set too low	Raise cutting height
		Deck is not leveled correctly	Level the deck
		Tire pressure is uneven	Check and inflate tires
Stringers	Stringers are sparse patches of uncut grass left behind the mower.	Blades are not sharp or are nicked	Sharpen blades
		Blades are worn down too far	Replace blades
		Engine RPM is too low	Mow at full throttle
		GROUND SPEED IS TOO FAST	SLOW DOWN
		Deck is plugged with grass	Clean deck

Recommended Mowing Heights		
Grass	**Minimum Height**	**Maximum Height**
Tall Fescue	1 1/2"	3"
Kentucky Bluegrass	1 1/2"	2 1/2"
Bahia Grass	2"	3"
Bermuda Grass	1/2"	1"
St. Augustine Grass	1"	3"
Zoysia Grass	1/2"	1"

Mowing Tips
Always mow at full throttle
Check deck pitch, front blade tip MUST be 1/4" - 3/8" lower than the back of the blade tip.
Cut 1/3 of the grass blade, cutting more is not recommended unless grass is sparse
Use a slower ground speed when grass is wet and lush or when using a mulch kit.
Clean the under side of the cutter deck after each use. Grass build up WILL eventually effect cut quality.

NOTES:

NOTES:

4600X Wedgewood Blvd
Frederick, MD 21703
www.wrightmfg.com